COST and MANAGEMENT

VOL. XXVI APRIL No. 4

A METHOD FOR KEEPING SELLING PRICES MORE CLOSELY ABREAST OF COST TRENDS
By John B. Craig 132

Mr. John B. Craig is Research Assistant, Management Studies Department, Economic Research Division, Eli Lilly & Company, Indianapolis, Ind. He graduated from the University of Illinois with the Bachelor of Science degree in accounting and is a member of the Indianapolis Chapter of N.A.C.A. Mr. Craig's paper was made available to Cost and Management through the courtesy of N.A.C.A.

COST REDUCTION THROUGH INDUSTRIAL ENGINEERING
By William P. Park 141

William P. "Bill" Park was born in Scotland in 1903. After attending high school, he was apprenticed as a toolmaker to John Hood in Scotland. In 1923 he came to Canada and, prior to joining Ford of Canada in 1924, he worked as a tool and die maker for Motor Products Corporation and General Motors.

At Ford of Canada, he first worked in the tool repair department, and later in time study. In 1947, he became superintendent of Plant 4, and in the following year was appointed to his present position as general superintendent of industrial engineering.

REGULAR DEPARTMENTS

SOCIETY NOTES 116

NEW MEMBERS 119

CHAPTER NOTES 120

C. & M. ROUND-UP 122

CURRENT ARTICLES OF INTEREST 126

STUDENT SECTION 149

Published Monthly by the
SOCIETY OF INDUSTRIAL AND COST ACCOUNTANTS OF CANADA
Incorporated 1920
Editorial and Business Offices: 66 King St. E., Hamilton, Ontario.
J. N. Allan, R.I.A., Secretary-Manager and Editor.

Subscription price to non-members, $5.00 per year. Single copies, 50 cents. Members desiring five copies or more of a single issue, may obtain them at 25 cents. Opinions expressed by articles and comment are not necessarily endorsed by the Society of Industrial and Cost Accountants.

Authorized as second class mail, Post Office Department, Ottawa.

SOCIETY NOTES

S.I.C.A. SPECIAL BULLETIN SENT TO ALL GOVERNMENT DEPARTMENTS

The Department of Printing and Public Stationery has given wide distribution of the article: "Cost Reduction by Form Control", by James F. Foley, which was published by the Society as a Special Bulletin. We are informed that 500 hundred copies have been distributed among all departments of the Government.

This information is most interesting, not only because it is evidence of the value placed upon Mr. Foley's article, but also because it may be instrumental in saving money for the taxpayers.

COURSE FOR JUNIOR EXECUTIVES SUONSORED BY HAMILTON CHAPTER, BIG SUCCESS

The series of lectures for junior executives, sponsored by the Hamilton Chapter (C. & M., Dec. '51) has now been successfully concluded. The success story was convincingly revealed in the tabulation of answers to a questionnaire sent to all those who attended the lectures. Not only were the replies almost unanimously in favour of continuing the course another year, but 75% recommended that it be expanded to a three-year programme. This, together with the answers given to a number of other questions indicates that the course was of very practical value, that it fills a definite need and that it has great potentialities.

The Hamilton Chapter undertook the project to explore the possibilities of such a course as another service to be introduced by the Society in selected centres. Dr. Geo. Moller and A. R. Wright, of the Hamilton Chapter, are now working with the educational committee of the Ontario Society to draw up specific plans for introducing the course in other centres next October. As a result of meetings already held, it has been decided:

(1) That the program be directed to those with a background of business experience in positions of responsibility from

which they should advance to the policy-making level. The course is intended to enhance their outlook in the broader fields of business administration.

(2) The title of "Executive Development Course" be used to more accurately indicate its purpose and objectives.

STUDENTS — "WHY STUDY?"

(An Editorial by Harold Bricker)

In this period of prosperity accompanying Canada's expanding economy, especially with young graudates from the lower schools, there is too much of "WHAT DO I GET?" and not enough of, "I HAVE THIS TRAINING AND EXPERIENCE WHICH I AM ANXIOUS TO APPLY TOWARD THE OPPORTUNITY OPENED TO ME."

Too many of our young people are leaving school to become GOLD PLATED office boys or errand girls. The mere fact that they are able, in such capacities, to earn as much as their parents did before they were born, is conclusive evidence that there is a BETTER OPPORTUNITY, somewhere farther up the line, of responsibility in the business. The responsibilities, opportunities and rewards surrounding EXECUTIVE appointments are open to all younger people — BUT, only those with the qualifications, developed by means of education, through experience, will be offered SUCH OPPORTUNITIES.

Only those who are smart enough to make the concentrated INVESTMENT of their ability, in education and through experience, yield the dividend of a RATED CAPACITY, will be offered the privilege of becoming RESPONSIBLE EXECUTIVES.

Business is literally crying for qualified personnel to start into the responsibilities leading to executive offices. Many firms are taking University graduates, in Arts and Engineering, and giving them training in their particular requirements of technical, sales, accounting and cost accounting fields of service, in particular, as well as in many other lines of special employment.

The Cost Accounting service in any organization is recognized as being one of the principal avenues leading to important executive responsibility.

NATIONAL CONFERENCE

— AND —

EQUIPMENT EXHIBIT

VANCOUVER, B.C., JUNE 24th, 25th, 26th

The "Boss" says: "One good idea can repay the cost of attending a Conference." Our Conference will give you many ideas on

"MANAGING TO-DAY'S DOLLAR"

The Expense dollar and the Sales dollar will be amongst the subjects discussed in the Technical Sessions. You are bound to win!

The programme planned for the ladies includes some wonderful trips on the sea coast and up the mountains surrounding Vancouver. We know they are going to enjoy every minute they are here.

"Managing To-day's Dollar"

New Members

NON-RESIDENT CANADIAN

R. Varadarajan, Seshasayee Bros. Ltd., Tennur, Tiruchirapalli, South India

SAINT JOHN CHAPTER

Oswald Brand, Irving Pulp & Paper Ltd., Fairville, N.B.

FORT WILLIAM-PORT ARTHUR CHAPTER

Miss Gladys E. Ward, The Fitzsimmons Fruit Co. Ltd., Port Arthur, Ont.

Olav Sundland, Great Lakes Lumber & Shipping Ltd., Fort William, Ont.

Bill Giciuk, Great Lakes Lumber & Shipping Co. Ltd., Fort William, Ont.

HAMILTON CHAPTER

Earl L. Statham, Brantford Roofing Co. Ltd., Brantford, Ont.

KENT COUNTY CHAPTER

James A. Stacey, International Harvester Co., Ltd., Chatham, Ont.

KITCHENER CHAPTER

Bruce Varty, The R. McDougall Co. Ltd., Galt, Ont.

OTTAWA CHAPTER

J. Grant Woolsey, The General Supply Co. of Canada Ltd.

Harry Wood, C.A., 53 Queen St.

TORONTO CHAPTER

William H. Penhorwood, J. D. Woods & Gordon Ltd.

E. Fraser Macintyre, 75 Baby Point Rd.

WINDSOR CHAPTER

Cecil J. Shortridge, The Canadian Salt Co. Ltd.

John E. Somppi, International Business Machines Co. Ltd.

Reginald Roberts, Long Manufacturing Co. Ltd.

NON-RESIDENT ONTARIO

D. Robert Gilmaster, C.A., Armstrong, MacLaren & Co., Barrie, Ont.

MONTREAL CHAPTER

Charles Paradis, Courtois, Fredette & Cie.

H. Muller, Dominion Tar & Chemical Co. Ltd.

F. P. Levine, P. S. Wise & Co.

QUEBEC CHAPTER

J. G. Gregoire, Beauce Jonction, Que.

Gerard Beaulieu, The Bank of Montreal, Bedford, Que.

NOVA SCOTIA SOCIETY

Gerald A. Dean, Hopewell, Pictou Co., N.S.

Andrew H. Dill, 115 Inglis St., Halifax, N.S.

Richard H. Glube, 151 South Park St., Halifax, N.S.

Gordon L. McKay, 11 Swaine St., Halifax, N.S.

Cyril J. Webb, 4 Hamlock Ave., Halifax, N.S.

Chapter Notes

EASTERN TOWNSHIPS CHAPTER

Mr. R. H. Perowne, Manager, Industrial Relations Department, Dominion Textile Co. Ltd., gave a most enlightening address before the March meeting of the Chapter on the subject "Collective Bargaining".

The speaker stated that union orgazination is now big business, a highly competitive business, and in discussing unions the effects of collective bargaining on employees' morale should be considered. He emphasized that everyone in management, and particularly those in the financial and accounting professions, should recognize and appreciate the ever increasing scope and impact of collective bargaining on society.

Representatives of top management from local industries were present to hear this interesting and important address. The meeting was chaired by Jack Grundy with Jim Corfield introducing the speaker and past chairman Bob Blake expressing the thanks of the meeting.

TORONTO CHAPTER

The final meeting of the Toronto Chapter-Student Section was held on March 20th, at the Oak Room, Union Station. It was evident from the 120 members and guests present that every section of industry and business was represented.

Mr. Simon Collier, Director of Quality Control, Johns-Manville Corp. New York, dealt with his subject "Modern Quality Control" through the use of a sound color film. The film covered two of the more important phases of Quality Control, namely Control Charts and Sampling Plans.

Mr. Collier preceded the showing of the film with a short talk in which he stressed the importance of Quality Control with regard to selling a product. He explained how at first with hand labor Quality Control was present in the form of the workman's pride of his product, but with mass production methods Quality Control necessarily followed. Mr. Collier closed his remarks by giving a background of the build-up of his company's method of training and establishing Statistical Quality Control.

MONTREAL CHAPTER

The Students' Committee of the Montreal Chapter conducted two specialized meetings during the current season, each one aimed at a separate sector of the student body in an effort to solve any problems confronting the particular groups concerned.

The first was for the benefit of those students who were at or near the point of writing their thesis and was for the purpose of assisting them in starting and completing this, their final effort towards attaining their R.I.A. degree. Three prominent registered members of the Chapter, all interested in education, gave their time and knowledge for the benefit of the meeting. These were Van Harris, Provincial President; Hugh Bacon, Provincial 2nd Vice-President, and Vic Davies, member of the Provincial Council and all were extremely helpful in answering questions as to subject matter, approach, procedure and other matters relating to thesis writing. A general

discussion developed which should enable many to turn out a better job in less time.

The second meeting was directed at the newer and the prospective student members and repeated a similar gathering held two years previously. It took the form of a very informal get-together with simple refreshments and gave an opportunity to outline to those attending the purposes and objects of the Society and to answer questions relating to it and to the course of studies available. The meeting opened with two short, semi-instructional films and Mr. Vic Davies attended on behalf of the Montreal Chapter and gave an able talk on all aspects of the Society and headed the open forum which ensued. The whole evening was on a semi-social scale and permitted an easy intermingling which promoted fellowship and good relations among members.

Both meetings were under the general guidance of Mr. Everett Harrison as Chairman of the Students' Committee and it is felt that both these well attended gatherings were worthwhile and successful.

OTTAWA CHAPTER

Speaking at the regular monthly meeting of the Ottawa Chapter on March 20, 1952, Mr. E. L. Hamilton, B. Comm., C.A., Assistant Treasurer, Canadian Industries Limited, Montreal, chose as his subject "Comparison of Government and Industrial Pension Plans".

Mr. Hamilton pleased the gathering with an interesting discourse and discussion of the problems arising with those responsible for the administration of Industrial Pension Plans as a result of Government Pension Acts applicable to persons of 65 years of age and over. In dealing with the need for integration of the various plans and suggestions for the co-ordination and control of benefits and costs, it was obvious to those present that they were being treated to the benefits of a thorough grasp and study of the question.

The Speaker was introduced by Mr. E. G. Hamlyn, of Clark Dairy Limited, who together with Mr. Fred W. Stremes, of the Treasury Cost Inspection and Audit Division, were introduced as two new Directors of the Chapter. The Speaker was thanked by Mr. J. Scott, of J. H. Connor and Sons, Limited.

Prof. W. J. McDougall, B.A., C.A., of Carleton College, announced details respecting the forthcoming Annual Convention of the Society in London in May.

The meeting was under the Chairmanship of the Treasurer, Mr. C. K. Wolff, Woods Manufacturing Company Limited, who spoke of the increased membership in the Chapter and the Chapter's first place position for the Fernie Trophy.

PERSONALS

Norman R. Barfoot, R.I.A., has been appointed Budget and Cost Supervisor of Fiberglas Canada Ltd. In this capacity Mr. Barfoot will be in charge of plant accounting and budgetting in all divisions of the Company. He was formerly accountant and office manager of the company's Sarnia plant.

C & M ROUND-UP

By N. R. BARFOOT, R.I.A.

NATIONAL STATISTICS — 1928-1950

The pattern of income, spending and utilization of money, goods and services over the last 25 years makes an interesting story and shows the broad trends of our economy in Canada, and the trend of all countries towards State guaranteed security, and the diminution of the earlier very free enterprise spirit of the entrepreneur. The following points will prove interesting, I am sure.

Canadians consumed 38% more goods and services in 1950 than in 1928 on a per capita basis. This indicates a very substantial gain in the standard of living.

The physical volume of output represented by investment in housing, plant and equipment was 54% larger in 1950 than in 1928.

Total output of goods and services increased by 90% between 1928 and 1950, implying a compounded rate of 3% growth per year. However, the 1950 to 1951 rate was nearly 6%.

The smallest percentage increase from 1928 to 1950 was shown by exports and imports. This, of course, is indicative of greater dependence on the domestic market than that of a quarter century ago.

Manufacturing accounted for one-third of the National income in 1950, compared with 23% in 1928.

Transportation, communication and public utilities income declined in relative positions from 13% to 10% and services from 12% to 8% in the 25-year period under review.

Farm income declined from 16% of the total in 1926 to 1929 to 13% during the period 1947-1950.

Personal income was made up of 59% wages and salaries in 1928 — 62% in 1950.

Government family allowances, veterans' gratuities and pensions, and so on, accounted for 8% of total personal income in 1950, compared to 2% in 1928.

Interest, dividends and rental incomes have dropped from 13% in 1928 to 9% in 1950.

On a per capita basis, the increase in personal disposable income after taxes was from $464 in 1928 to $916 in 1950, a rise of 97%.

PLASTICS — 1951

Total Canadian output $100 million.

Annual payroll $30 million.

Since 1946, thermoplastic molding increased by 225% in dollar volume; U.S. — 120%.

In the same period the thermosetting industry increased by 115%; U.S. — 8%.

This tremendous upswing in usage and manufacture has put plastics high on the shortage list, due to a reliance on dwindling outside sources for raw materials.

With the trend to petro-chemical sources for chemicals, the supplies of gas and oil in Alberta may indicate a Canadian source of raw material for this growing and important industry.

CONSTRUCTION INDUSTRY

1951 Building reports show heavy increases over the previous year and also demonstrate the changeover from civilian to defense construction.

Industrial increased 220% over 1950 — total was $452 million.

Engineering increased 113% — total was $859 million.

Commercial increased 24% — total was $548 million.

Housing dropped 19% — total was $437 million.

One out of every seven Canadians is living in a post-war house.

However, various influences have caused the drop in house contracts.

Central Mortgage removed the 1/6 extra loan provision of the N.H.A.

A shortage of mortgage money by the big lending institutions slowed the building program.

Supplies were not helpful to the situation, as defense needs came to the fore.

The outlook is a continuing cutback in residential construction in 1952.

LIFE INSURANCE — 1951

Sales of Life Insurance totalled approximately $1.988 million, an increase of 13% over 1950.

Ordinary insurance was $1.514 million, up 12%. Industrial insurance was $181.1 million, up 2%. Group insurance was $293.5 million, up 28%.

Reasons for the remarkable increases were given by underwriters as follows:--

High employment and wages.

Increased conviction of the place of insurance in caring for dependents.

High cost of living, which necessitated a greater life insurance estate for dependents.

Group coverage took a major advance forward and is increasingly important to the Insurance Companies.

PENSION SCHEMES

A major Canadian Industry revised its pension scheme recently to integrate the plan with the new Government old age plan.

The revision planned will give an employee retiring at age 65 the same amount of pension as he will get at 70 when he becomes eligible for the $40 a month no-means-test government allowance.

Before the pensioner becomes eligible for his government allowance, the Company will pay the difference, so that a level of lifetime retirement income is maintained from 65 on.

Books for Management

SYSTEMS ANALYSIS FOR EFFECTIVE ADMINISTRATION

By Norman N. Barish. A book planned specially for staff personnel engaged in systems work, supervisors of specialized activities and top management personnel. 320 pages, 99 illustrations, $7.00.

PROBABILITY CONTROLS

By Robert Kirk Mueller. How to calculate managerial risks. "A well-organized and authoritative over-all survey."—Dr. Charles E. Reed, General Electric Co. $6.75.

The Ryerson Press, Toronto

ELEVENTH ANNUAL

ONTARIO COST AND MANAGEMENT CONFERENCE

HOTEL LONDON **LONDON, ONTARIO**

MAY 29th, 30th and 31st

When you read this, it will only be a short time before the BIG EVENT takes place.

HAVE YOU REGISTERED YET?

Registration forms have been sent out. Plan now to attend, and fill in those forms right now. If you haven't a form, phone, write or wire Norman Duncan, Labatts, Limited, London, and he will see to it that all details are attended to.

YOU HAVE SEEN THE PROGRAMME

Be honest with yourself. Can you afford to miss the benefits which you will derive from the Technical Sessions?

Is there a day goes by that does not offer a challenge to you? Come and hear these talks — you will find food for thought and perhaps an answer to some of the questions which have been bothering you. Remember, our theme is:

CHALLENGING OPPORTUNITIES FOR THE INDUSTRIAL ACCOUNTANT

ENTERTAINMENT

We think that you will find this part of the Conference very much to your liking. You are coming to London for some relaxation. What better way than with fine music, dancing and superb meals — enjoyed with old friends and new?

Your committees have worked hard to arrange a balanced programme. We know you will like it and we are looking for you to attend.

Our Society extends from coast to coast. Wherever you may be, the Ontario Society extends an invitation to you to join with us at this Conference and

A HEARTY WELCOME AWAITS YOU AT LONDON

Payroll calculations in a twinkling by the Friden Calculator-The Thinking Machine

Automatically
it takes work
out of figure-work

Watch the Friden Automatic Calculator handle a payroll and you'll realize its unmatched flexibility and capacity for all kinds of "figure thinking". Every computation—straight time, overtime, take-home pay, payroll recap—performed automatically and with uncanny speed

Friden

THE THINKING MACHINE OF AMERICAN BUSINESS

● Exclusive features enable the Friden to handle more steps in figure-work *without operator decisions* than any other calculating machine ever developed.

Once the operator sets a problem on the keyboard—and touches the proper keys—no additional human motions are required. The Friden automatically "thinks out" accurate answers.

You and the Friden Man will discover important applications of Friden "figure thinking" in terms of your own business.

Figure on a Friden NOW—phone or write the Friden Man near you. Friden sales, instruction and service available throughout the U.S. and the world. FRIDEN CALCULATING MACHINE CO., INC., San Leandro, Calif.

© *Friden Calculating Machine Co., Inc.*

FRIDEN CALCULATING MACHINE AGENCY

Canadian Distributors: JOSEPH McDOWELL & CO.

Confederation Life Building, Toronto, Ontario

Sales and Service in all principal cities.

CURRENT ARTICLES OF INTEREST TO INDUSTRIAL ACCOUNTANTS

ACCOUNTING

ACCOUNTING TRENDS & TECHNIQUES — American Institute of Accountants — 1951 edition.

ADVERTISING AGENCIES

ADVERTISING AGENCIES — ACCOUNTING AND AUDITING PROBLEMS — Melvin N. Gelber and Joseph M. Geller — The Irish Accountant and Secretary — Nov. 1951.

BREAK-EVEN

THE BREAK-EVEN CHART — William L. Fill — The Accounting Review — April 1952.

BUDGETS AND BUDGETING

THE IMPACT OF BUDGETS ON PEOPLE — Walter B. Gerould — The Controller — March 1952.

CONSTRUCTION & CONTRACTING

CONSTRUCTION ACCOUNTING IN A DECENTRALIZED COMPANY — L. L. Kramer — N.A.C.A. Bulletin — March 1952, Sec. 1.

COST ACCOUNTING

REPORT OF THE COMMITTEE ON COST CONCEPTS AND STANDARDS — The Accounting Review — April 1952.

THE PRACTICAL APPROACH TO A COST ACCOUNTING INSTALLATION — The Australasian Institute of Cost Accountants Cost Bulletin — March 1951, Vol. 2.

DEPRECIATION

WHY DEPRECIATION RESERVE SHOULD NOT BE DEDUCTED FROM PLANT ACCOUNT — E. Toder — The Controller — March 1952.

DEVELOPMENT EXPENSES

FACTORY AND PLANT DEVELOPMENT COSTS — G. T. Verrall, M.A. — The Cost Accountant — April 1952.

DIRECT COSTING

A CONVERSION TO DIRECT COSTS — Charles R. Chambers — N.A.C.A. Bulletin — March 1952, Sec. 1.

ECONOMICS

SIGNIFICANCE OF INVESTED COST — A. C. Littleton — The Accounting Review — April 1952.

THREE DISCUSSIONS OF FINANCIAL ACCOUNTING AND INFLATION — George O. May, C.P.A. — The Journal of Accountancy — March 1952.

DETERMINING INCOME UNDER INFLATIONARY CONDITIONS — Samuel J. Broad, C.P.A. — The Journal of Accountancy — March 1952.

EXPANSION

THE PROBLEMS OF THE EXPANDING BUSINESS — THE PERSONNEL PROBLEM — A. F. Stewart — The Cost Accountant — February 1952.

FREIGHT

COST ACCOUNTING FOR MOTOR FREIGHT TERMINALS — Val B. Lehnberg — The Accounting Review — April 1952.

CURRENT ARTICLES OF INTEREST

GOODWILL

SHOULD GOODWILL BE WRITTEN OFF — A.I.A. Research Department — The Journal of Accountancy — April 1952.

GRAIN PROCESSORS

COST PRACTICES OF TWENTY GRAIN PROCESSORS — Harlan White — N.A.C.A. Bulletin — April 1952, Sec. 1.

HOSPITAL ACCOUNTING

UNIFORM HOSPITAL ACCOUNTING — Walter W. B. Dick — The Canadian Chartered Accountant — February 1952.

HUMAN FACTOR

ECONOMIC INCENTIVES AND HUMAN RELATIONS — William F. Whyte — Harvard Business Review — March-April 1952.

INCOME TAX

OBSERVATIONS ON THE TAXATION OF CAPITAL GAINS — W. F. Lougheed — The Canadian Chartered Accountant— February 1952.

INDUSTRIAL RELATIONS

THE COST OF LABOUR TURNOVER — H. J. Furness, F.C.W.A. — The Institute of Cost & Works Accountants.

INSURANCE

WHAT SHOULD YOUR INSURANCE LIMITS BE TODAY- — Arthur M. O'Connell — American Management Association — Ins. Series, No. 92.

IMPROVING COORDINATION OF INSURANCE WITH OTHER DEPARTMENTS: 1. The Finance Department — Joseph W. Oliver — American Management Association — Ins. Series No. 92.

IMPROVING COORDINATION OF INSURANCE WITH OTHER DEPARTMENTS: 2. The Legal Department — Charles J. Fellrath — American Management Association, — Ins. Series, No. 92.

IMPROVING COORDINATION OF INSURANCE WITH OTHER DEPARTMENTS: 3. The Personnel Department — James M. Gillen — American Management Association — Ins. Series No. 92.

IMPROVING COORDINATION OF INSURANCE WITH OTHER DEPARTMENTS: 4. The Production Department — Lester D. Mills, Jr. — American Management Association — Ins. Series, No. 92.

PROGRAMMING AND RECORDING INSURANCE — J. A. McBride, Jr., N.A.C.A. Bulletin — March 1952, Sec. 1.

FUNCTIONS OF THE CORPORATE INSURANCE EXECUTIVE — Metropolitan Life Ins. Co., New York.

INTERNAL AUDITING

EMPLOYEE FRAUDS (WITH EXAMPLES) — C. W. Leach — The Internal Auditor — March 1952.

INTERNAL CONTROL

A PROGRAM FOR EFFECTIVE INTERNAL CONTROL — V. Z. Brink — The Internal Auditor — March 1952.

INVENTORIES:

TOWARD UNIFORM INVENTORY PRICING: A Panel Session How Uniformity in Inventory Pricing Can Be Accomplished — H. T. McAnly — American Management Association — Financial Management Series — No. 100.

COST AND MANAGEMENT

JOB EVALUATION

HOW TO USE A JOB-EVALUATION PLAN FOR MERIT RATING — Factory Management and Maintenance— Feb. 1952.

LABOUR

THE MEASUREMENT AND CONTROL OF THE PRODUCTIVITY OF LABOUR — Harry T. Schwan — The Australasian Institute of Cost Accountants Cost Bulletin — Jan. 1951, Vol. 2.

THE COST OF LABOUR TURNOVER — H. J. Furness, F.C.W.A. — The Institute of Cost and Works Accountants.

MANAGEMENT

CRITERIA OF GOOD FINANCIAL MANAGEMENT UNDER CURRENT CONDITIONS: A Panel Session — American Management Association — Fin. Management Series No. 99.

THE PLACE AND STATUS OF THE FINANCIAL EXECUTIVE TODAY — T. F. Bradshaw — American Management Association — Financial Management Series No. 99.

EFFECTIVE MANAGEMENT IN SMALL BUSINESS — Harry S. Freedman — Harvard Business Review — March-April 1952.

REACHING OUT IN MANAGEMENT — William B. Given, Jr. — Harvard Business Review — March-April 1952.

INTERNAL AUDITING — AN AID TO MANAGEMENT — E. A. Breyman — The Internal Auditor — March 1952.

THE BOARD OF DIRECTORS AND BUSINESS MANAGEMENT — Melvin T. Copeland and Andrew R. Towl — Digested by Kenneth R. Andrews — The Controller — April 1952.

ORGANIZATION OF FINANCIAL DEPARTMENT AIDS MANAGEMENT — C. J. Kushell, Jr. — The Journal of Accountancy — March 1952.

MANUALS

REPORTING TO MANAGEMENT — H. E. Limmer, A.C.A.A — The Australasian Institute of Cost Accountants Cost Bulletin — Jan. 1951, Vol. 2.

PREPARATION OF BRANCH OFFICE MANUALS — A. C. Ackerman — N.A.C.A. Bulletin — April 1952, Sec. 1.

ORGANIZATION

BUILDING A COMPETENT FINANCIAL ORGANIZATION — C. J. Kushell, Jr. — American Management Association — Financial Series No. 99.

ORGANIZATION OF FINANCIAL DEPARTMENT AIDS MANAGEMENT — C. J. Kushell, Jr. — The Journal of Accountancy — March 1952.

BUSINESS ORGANIZATION — Metropolitan Life Ins. Co., New York.

FUNCTIONS OF THE PURCHASING AGENT — Metropolitan Life Ins. Co., New York.

FUNCTION OF THE CORPORATE INSURANCE EXECUTIVE — Metropolitan Life Ins. Co., New York.

FUNCTIONS OF THE PERSONNEL DIRECTOR — Metropolitan Life Ins. Co., New York.

FUNCTIONS OF THE TREASURER — Metropolitan Life Ins. Co., New York.

OVERHEAD

APPLYING BURDEN BY PRODUCTION FACTORS — James H. March — N.A.C.A. Bulletin — April 1952, Sec. 1.

PENNY ELIMINATION

PENNY ELIMINATION — Robert H. Birkhold — The Controller — April 1952.

CURRENT ARTICLES OF INTEREST

PERSONNEL

FUNCTIONS OF THE PERSONNEL DIRECTOR — Metropolitan Life Ins. Co., New York.

PRINTING

BOOK PUBLISHING ACCOUNTING — James J. O'Donnell — The New York Certified Public Accountant — Feb. 1952.

PRODUCTION CONTROL

PRODUCTION CONTROL AND THE CONTROLLER — John O. Tomb — N.A.C.A. Bulletin — April 1952, Sec. 1.

A PRODUCTION PLANNING PROCEDURE — L. T. Konopak — N.A.C.A. Bulletin — April 1952, Sec. 1.

PRODUCTIVITY

THE MEASUREMENT AND CONTROL OF THE PRODUCTIVITY OF LABOUR — Harry T Schwan — The Australasian Institute of Cost Accountants Cost Bulletin — Jan. 1951, Vol. 2.

PROFITS

DETERMINING INCOME UNDER INFLATIONARY CONDITIONS — Samuel J. Broad, C.P.A. — The Journal of Accountancy — March 1952.

PUBLIC UTILITIES

WHY DEPRECIATION RESERVE SHOULD NOT BE DEDUCTED FROM UTILITY PLANT ACCOUNT — Bernard S. Rodey, Jr., C.P.A. — The New York C.P.A. — March 1952.

PURCHASING

FUNCTIONS OF THE PURCHASING AGENT — Metropolitan Life Ins. Co., New York.

REPORTS

REPORTING TO MANAGEMENT — H. E. Limmer, A.C.A.A. — The Australasian Institute of Cost Accountants Cost Bulletin — Jan. 1951, Vol. 2.

NEED FOR SUPPLEMENTARY DATA IN INTERPRETATION OF INCOME REPORTS — Norton M. Bedford — The Accounting Review — April 1952.

REPORTS SHOULD BE WRITTEN CHIEFLY FOR USE BY MANAGEMENT — Wilfred Reetz — The Journal of Accountancy — April 1952.

HOW TO IMPROVE ENGINEERING-MANAGEMENT COMMUNICATIONS — prepared by National Society of Professional Engineers.

WRITING THE REPORT — A. H. Kent — The Internal Auditor — March 1952.

RESEARCH

BUGETARY CONTROL IN A RESEARCH AND DEVELOPMENT COMPANY — William Francis O'Brien, Jr. — N.A.C.A. Bulletin — March 1952, Sec. 1.

RETAILING

CASH AND INVENTORY CONTROLS FOR RETAIL GROCERY CHAINS — A. A. Venet — The Internal Auditor — March 1952.

SELLING & DISTRIBUTION

THE PROBLEM OF SELLING AND DISTRIBUTION COST ACCOUNTING — The Institute of Cost and Works Accountants.

SHOE MANUFACTURING

PRODUCTION AND PROGRESS CONTROL IN THE BOOT INDUSTRY — John Gilbert — Business — Journal of Management, Production & Personnel.

SMALL BUSINESSES

EFFECTIVE MANAGEMENT IN SMALL BUSINESS — Harry S. Freeman — Harvard Business Review — March-April 1952.

STANDARD COSTS & COSTING

THE USE OF STANDARDS IN NON-MANUFACTURING DIVISIONS — The Australasian Institute of Cost Accountants, Cost Bulletin — Jan. 1952. Vol. 2.

STANDARDS

STANDARD TIME DATA FOR CLERICAL PERFORMANCE STANDARDS — Paul Mulligan — The Controller — April 1952.

STATISTICS

STATISTICS RELATING TO INCOME OF AND CAPITAL EMPLOYED BY COMPANIES — The Accountants' Magazine — April 1952.

STOVE INDUSTRY

UNIFORM STANDARD COSTS FOR THE STOVE AND FURNACE INDUSTRY — C. B. Taylor.

TAXES

THE TAX — SUNDRY LIKES AND DISLIKES — G. Moller — Canadian Tax Foundation — Vol. II — Jan.-Feb. 1952.

TERMINAL

COST ACCOUNTING FOR MOTOR FREIGHT TERMINALS — Val B. Lehnberg — The Accounting Review — April 1952.

TERMINOLOGY

TERMINOLOGY OF COST ACCOUNTANCY — The Institute of Cost and Works Accountants.

TEXTILES

AN ACCOUNTANT'S FIRST VISIT TO A TEXTILE WEAVING MILL — Sidney C. Fried, C.P.A. — The New York C.P.A. — March 1952.

COST PROCEDURES FOR A TEXTILE WEAVING MILL — David Grossberg, C.P.A. — The New York C.P.A. — March 1952.

ARE STANDARD COSTS PRACTICABLE IN A TEXTILE WEAVING MILL — Charles G. Johns, C.P.A. — The New York C.P.A. — March 1952.

TIME AND MOTION STUDIES

NEW TIME STUDY FORM PUTS BETTER METHODS FIRST — A. G. Champan — Factory Management and Maintenance — February 1952.

TREASURER

FUNCTIONS OF THE TREASURER — Metropolitan Life Ins. Co., New York.

TRUST ACCOUNTANCY

ELEMENTARY TRUST ACCOUNTANCY — Charles A. Scott, C.A. — The Accountants' Magazine — April 1952.

UNIFORM ACCOUNTING AND COST ACCOUNTING

UNIFORM COST ACCOUNTING AND THE PRINCIPLES OF COST ASCERTAINMENT — The Institute of Cost and Works Accountants.

WAGES

ACCOUNTING TREATMENT OF VACATION WAGES — R. H. Armor — N.A.C.A. Bulletin — April 1952, Sec. 1.

WORKING CAPITAL

OPERATION CRITICAL! IS YOUR COMPANY PROSPEROUS — BUT BROKE? — Edward W. Buge — The Controller — April 1952.

Profitable peacetime operations stem from prompt delivery of goods—things accomplished—costs curtailed! Supreme in the field of business systems, Ditto's One-Writing Method has proved itself the easier—quicker—more economical way to get things done in *every* line of business.

Without mats—without stencils—Ditto streamlines procedures of the most complex nature—takes routine office copying in stride—provides copies of anything written, typed or drawn in 1 to 8 colors—assures photographic accuracy. Master sheets—on paper stock—are so *inherently* flexible that all, or any part, of data may be used (or added to) whenever, wherever needed.

Call or write today for more facts about Ditto.

DITTO
One Writing Business Systems

MAIL COUPON TODAY

DITTO OF CANADA, LTD.
310 Spadina Ave., Toronto, Canada

Please send us free, without obligation, actual forms and literature showing how Ditto can be used in your business.

Company Name.....

My Name.....*Title*.....

Address.....

A Method for Keeping Selling Prices More Closely Abreast of Cost Trends

J. B. CRAIG

Management Research Assistant, Economic Research Division, Eli Lilly and Company

In this article, the author presents a technique for the continuous analysis of unit product cost trends as a basis for the proper study of cost-price relationship. These trends are projected by the use of charts thus providing an effective look for formulating second and timely pricing decisions.

I. Introduction

We are all aware of the increasing importance of appropriate selling prices to our sales and profit accomplishments. Almost everyone will agree, regardless of the pricing theories pursued, that an essential part of a sound pricing procedure is an adequate method for reviewing product prices in relation to their cost trends.

Minor fluctuations in product costs, of an accumulative nature, must be brought to light currently for possible pricing consideration. Also, management should be provided with advance knowledge of cost trends that might indicate an impending industry-wide price adjustment. The solution to the pricing needs of a company is a method for detecting and analyzing the changes in the product cost trends in time for appropriate action. Such a method — cost-trend analysis designed specifically for pricing purposes — is demonstrated in this paper.

II. The Need for Complete Unit Product Cost Analysis

Need for the consideration of all cost factors. Consideration should be given to all cost factors. They are:

Material Costs
Labor and Burden Costs
Material Yield
Price and Demand and their effect upon volume of production

Need for trend of cost instead of current cost. The usual computations of product cost being used in pricing decisions are

based on current market prices of purchased material and current conversion rates. Even though these costs are current, they are static costs. Figures used for pricing considerations should be active computations based on current and future *trends of cost*. Cost computations compiled for accounting purposes cannot, in most cases, be used for future planning per se and it is felt that they should not be used at all for pricing, other than to compute trends, because of their basic historical nature and composition.

Solution — Cost Trend Analysis. If selling prices are to be kept abreast of cost trends, all the forces acting upon cost should be made available for timely pricing decisions. If prices cannot be altered, signals for production or research action may be indicated. The solution is a method of unit product cost trend analysis designed specifically for pricing purposes.

Product cost trend analysis is feasible through the adaptation of a statistical technique known as time series analysis. The technique employs charts to provide a visual analysis of the changes in unit costs so that trends, frequently not perceptible in a fluctuating series of figures, can be easily detected. For practical application the actual figures are plotted on charts, and the trends, fitted by inspection or computed by an appropriate mathematical formula, are plotted on an overlay so that trends may be recomputed as the time passes. A method of product cost trend analysis is illustrated in the next section.

III. A Cost Trend Analysis Method for Price Review Purposes

The first step in product cost trend analysis is to plot the bulk[1] cost per unit of measure (each, pint, pound, 1,000, etc.). It is not until unit costs show abnormal activity that there is a real cause for concern; however, lack of change does *not* preclude the possibility that there are compensating conditions.

For illustration purposes, a product was selected and the average unit cost (each) was plotted by month from January 1950 to March 1951 on Exhibit 1.

With the monthly data plotted it can be seen by observation that the costs have been steadily increasing. To determine the amount of the increase, the peaks and valleys of the monthly data are averaged by a trend line[2] drawn through the series. From the trend line computed values were set down as follows:

BULK UNIT COST BY MONTH

PRODUCT X

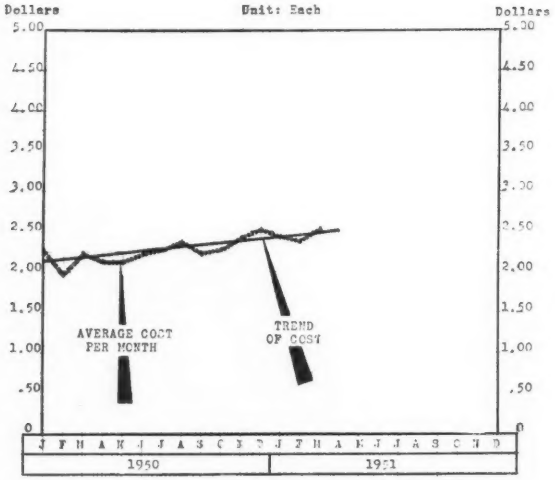

EXHIBIT 1

UNIT MATERIAL PRICE BY MONTH

PRODUCT X

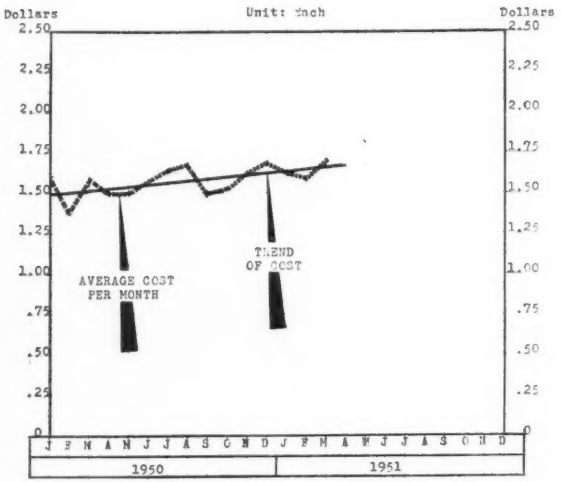

EXHIBIT 2

UNIT LABOR AND BURDEN COSTS BY MONTH

PRODUCT X

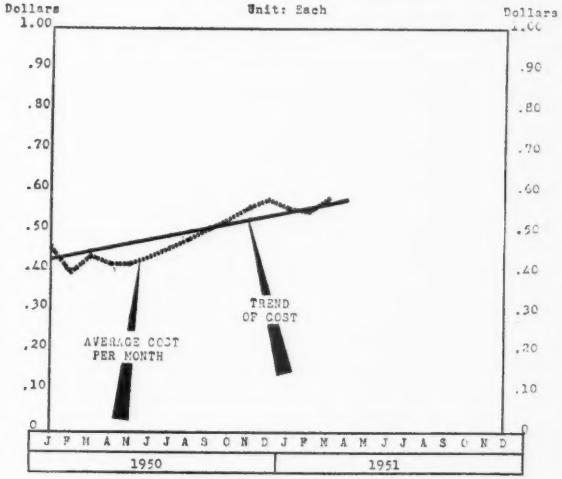

EXHIBIT 3

UNIT YIELD COST BY MONTH

PRODUCT X

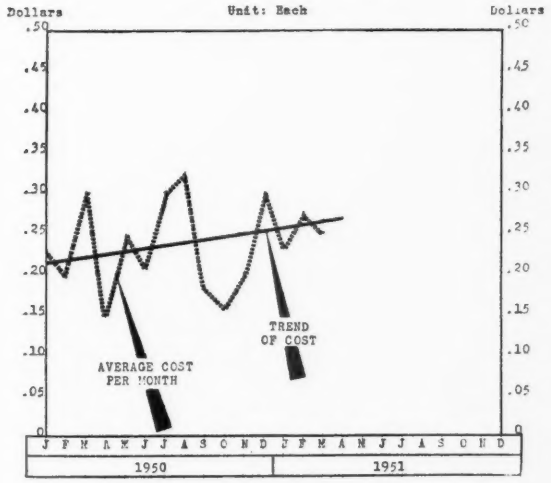

EXHIBIT 4

	January 1950	March 1951	% Increase
Unit Cost—Computed (Unit — each)	$2.150	$2.500	16.2%

* * * *

[1]Bulk unit costs were used as the base for this illustration. Costs for finishing are based on the sizes finished and the type container used and can be analyzed in a similar manner. Administration, marketing and distribution costs and their allocation to product costs are beyond the scope of this paper.

[2]There are a number of mathematical formulas for computing trends lines which must be selected appropriately and used judiciously with respect to the data at hand. For this illustration, the least squares method was used.

A. Material Price as a Factor

Material costs in the product are affected by two factors — price and yield. For purposes of analysis and projection, the two are separated and the average material costs due to price increases only have been plotted by month on Exhibit 2.

Again the same statistical technique was employed, as described previously, wherein the trend line is drawn to average out the monthly fluctuations. The computed values for the material price trend, read off of the trend line, are as follows:

	January 1950	March 1951	% Increase
Material Price — Computed ..... (Unit — each)	$1.505	$1.665	10.6%

It was found that the computed material price increased 10.6% for the period. Material price accounted for 70% of total product cost in January 1950; so 70% of 10.6% = 7.4%, the portion that material price contributed to the product unit cost increase of 16.2%, as computed for Exhibit 1.

B. Labor and Burden as a Factor

It is assumed that the labor and burden costs for product X are incurred in two departments. The department costs are charged to the product based on standard minutes allotted as conversion time. The average monthly costs which these departments have added to the product were analyzed and the figures plotted by month on Exhibit 3. These costs have increased and

a computation of the trend gives the following computed values as taken from the trend line:

	January 1950	March 1951	% Increase
Labor and Burden Costs — Computed (Unit — each)	$0.430	$0.570	32.5%

It was found that the computed labor and burden costs for these departments increased 32.5% for the period. Labor and burden costs accounted for 20% of total product cost, so 20% of 32.5% = 6.5%, the portion that labor and burden costs contributed to the product unit cost increase of 16.2%, as computed for Exhibit 1.

C. Yield as a Factor

Material and labor and burden, as analyzed in the preceding pages, gave no consideration to manufacturing losses which normally would increase costs of good units produced. This was done to eliminate factors other than those being measured.

Now, however, the intent is to measure the extent to which the losses, in various stages of production, have increased costs of good units produced. For purpose of this computation the various losses have been combined and the average costs by months are plotted on Exhibit 4. Here again the worth of the trend technique is emphasized in averaging out the wide fluctuations and in pointing out that in final analysis the trend of costs is upward. The computed values as taken from the trend line are as follows:

	January 1950	March 1951	% Increase
Yield Cost—Computed (Unit — each)	$0.215	$0.265	23.0%

There has been an increase of 23% in the computed costs due to yield between the two dates. Yield costs accounted for 10% of total product cost; so 10% of 23% — 2.3%, the portion that yield cost contributed to the unit product increase of 16.2%, as computed for Exhibit 1.

Summary

To summarize the effect of the various factors, the following is given:

Values Computed for:	January 1950	March 1951	Increase % Points	% of Total Increase
Total Unit Cost (Exhibit 1)	$2.150	$2.500	16.2%	100%
Unit Cost Factors:				
Material Price (Exhibit 2)	1.505	1.665	7.4	46
Labor and Burden (Exhibit 3)	.430	.570	6.5	40
Yield (Exhibit 4)	.215	.265	2.3	14

It is apparent that the unit cost increase of 16.2%, illustrated in Exhibit 1, was the result of increases in all cost factors. The illustrations given show the relative importance of the various elements of unit cost. Material, which was 70% of cost in the product, produced only 46% of the increase; while labor and burden and yield, which were only 30% of cost in the product, produced 54% of the increase.

* * * *

The knowledge of these cost trends and the analysis and projection thereof could give management a perception of the appropriate action to be taken, as follows:

1. Attempt to correct the trend increases by production adjustments and project the future expected trends on that basis.
2. If production adjustment is impossible, accept the projected profit realization even though it is a lesser amount, or
3. Consider a price change.

If a price change is considered, the effect of possible reduced demand and competitive participation must be considered.

D. Price and Demand as Factors

Price and demand of a product affect cost indirectly. They frequently change the volume level and thereby increase or decrease the per unit absorption of fixed costs. Therefore, it is important to watch these elements and their interrelationship. The intent here is to recognize the relationship between price and demand and offer a method by which management can be kept informed of its presence in pricing decisions. To keep aware of the effect of price and demand, it is advisable to

watch three things — unit sales, price, competitive prices, if any. This can be accomplished by plotting the three for a given product on a chart kept up to date, preferably by month. As definite non-seasonal trends occur, quick analysis of the contributing factors can be made and action, if indicated, taken. If current action is not indicated, the item will be flagged for more minute perusal until the matter is cleared.

Comparing the trend of a company's price and unit sales with competitive price trend could be of valuable aid as an indication of changes in competitive thinking and its effect on the company's volume and pricing policy.

IV. Conclusions

In view of the many factors which affect the product cost-price relationship, it is considered necessary that a company have a unit product cost-trend analysis that will lay a sound foundation for scientific pricing. It has been shown in the preceding sections that statistical techniques can provide significant information, whch is considered to be useful in formulating product pricing decisions.

As a start, the following actions could be taken:

1. *Select Representative Products* which are providing the bulk of profits or potential profit for the company. They may or may not be restricted to big-volume products. As the procedures develop, consideration could be given to service items not falling within this category for it has been found that they are sometimes neglected.
2. *Observe Unit Cost Trends* by the preparation of charts, as illustrated in Exhibit 1. Average unit cost by months should be plotted and a trend line fitted by observation or statistical techniques.
3. *Observe Unit Sales Trends* by the preparation of charts, as discussed in Section III D, on which would be plotted by month:
    a. Unit Sales
    b. Price
    c. Competitive Prices

    This series of charts would provide data for the effect of price changes on volume by the company and/or competition. Prices affect volume and volume affects costs.

4. *Analyze Abnormal Cost and Sales Trends* by giving attention to the products showing changing cost trends, abnormal non-seasonal trends or revised competitive prices as follows:
   a. The preparation of charts, similar to Exhibit 2, on which would be plotted material price.
   b. The preparation of charts, similar to Exhibit 3, on which would be plotted labor and burden cost.
   c. The preparation of charts, similar to Exhibit 4, on which would be plotted added cost due to yield.
   d. The preparation of charts, similar to those recommended above, on which would be plotted the finishing costs applicable to various sizes. This data would be applicable to similar products being finished in like sizes.
5. *Project Cost Trends* on the afore-mentioned charts by analysis and investigation of each component. From the aggregate of these trends compute a projected unit product cost. The knowledge of historical data enhanced by forecasts of future trends would give management, in advance, an effective tool for formulating sound and timely pricing decisions consistent with changing product costs.

The importance of cost-price relationship warrants distinct study and analysis. For this reason, it would be advisable to establish a separate function, divorced from routine duties, to operate and develop further the techniques of unit product cost-trend analysis for pricing purposes.

Cost Reduction Through Industrial Engineering

By WILLIAM P. PARK

General Superintendent of Industrial Engineering, Ford Motor Company, Limited

The functional relationship of the industrial engineer and the cost accountant are described with practical illustrations to show how they combine to improve operating efficiency and reduce costs.

Do you remember the Arrow — the Pierce — the Durant?

Do you recall seeing a Star — or a Stanley Steamer — or . . . but I had better stop, for I could name countless other cars that have been made in the U.S. and Canada in the last 50 years and are no longer manufactured.

In retrospect we can look at the names of these HAS-BEENS in the automobile industry and their failure illustrates the importance of many modern business developments.

Some of them failed because they lacked good advertising, others — because they could not obtain sufficient financial backing. But most of them went under because they failed to provide a quality product at a price the public was willing to pay.

They failed — because they could not survive the toughest test of private enterprise — COMPETITION.

Because your work — and mine — helps improve the efficiency and productivity of private enterprise, I welcome the opportunity to-night to tell you a little about our work in Industrial Engineering at Ford of Canada.

Originally, in Canada, there was only one kind of Engineering. That was military engineering used to build defence for the young nation. The Rideau Canal is one evidence of this branch.

Then came Civil, Mining, Electrical, Mechanical, Chemical and Metallurgical Engineering, each one rising in turn to meet the needs of a country progressing rapidly from a colony to a modern nation.

Since the manufacturing era, the trend has been towards mass production and highly competitive markets.

Management to-day realizes that to-morrow's profits will not come from lower material or labor costs but rather from improved methods and better operating performance. Thus, we might say that like many other modern business specialists, the Industrial Engineering profession has been born of the struggle of business to weed out inefficient operations and improve existing methods. Like industrial accounting, it is an outgrowth of an older profession, developed to meet the specialized needs of our present day society. Currently it is in a period of evolution and new concepts of industrial engineering are being revealed each year.

As a consequence — one might ask, "What does the industrial engineer do?"

No exact or actual definition of the term Industrial Engineer exists as his functions differ in each company and are interpreted differently in Industrial Engineering Consulting firms. They vary from the **ALL-INCLUSIVE** improvement surveys in industrial plants and businesses to the conducting of a time study program.

To-day at Ford of Canada the Industrial Engineer is concerned with all the technical problems having to do with **HOW TO MAKE** the product. He works in close co-operation with and is a service to the manufacturing operations, management on shop operations, equipment planning, and daily production problems. He generally reports to the company top manufacturing executive.

For example, Ford of Canada Industrial Engineering includes:

The Process Engineer, who is a specialist in development of ways and means for manufacture of the product.

The Production Engineer, an expert on machine tools and heavy equipment, their application, procurement, installation and maintenance.

The Tool Engineer, a specialist in the jigs, fixtures, dies and tools used to hold the part and to actually do the work. These men apply the machine to the job.

The Material Handling Engineer, who studies the handling of all materials and products as they are moved from place to place.

The Time Standards Engineer, who is responsible for setting up time standards set up for the establishment of controls over a worker's methods of operation.

The Plant Layout Engineer, who gathers the work of all the others and translates it into a physical arrangement of the plant to best attain the Industrial Engineer's objectives.

The Engineering Training Instructors, who develop and carry out the latest ideas within industry in training men.

All these engineers co-operate in the development of company programs in manufacturing. All have, basically, a common approach, whether the programs be one for new models, improvement of existing conditions, or development of an entirely new idea.

Without benefit of standardized methods, they gather and analyze all the facts, preparing a facility project recommendation to show how expenditures will meet management's objectives.

The nature of the program determines the engineers selected to lead others in this concerted drive to attain objectives.

A typical industrial engineer's attack on a problem may be illustrated by outlining his work on a new model program for a cylinder block.

In his work he will study the part blueprints thoroughly, prepare a proposed manufacturing method, confer with all engineering staff and operating departments concerned to obtain general approval for this method, prepare a project estimate for management, arrange for design of all equipment required, arrange for a plant layout of the work space, place orders for equipment, and follow the equipment vendor for delivery.

This is not all. He will co-ordinate installations, arrange for time standards coverage, stay with the equipment until all troubles are solved and expected production is reached, and, FINALLY, complete all records and close out the completed project. Cylinder block tooling for 40 p.H. to-day would cost approximately $3.6 million which emphasizes the necessity for thorough industrial engineering pre-planning.

And now that we have analyzed the work of the industrial engineer, let us consider the relationship between cost accounting and industrial engineering.

Further insight into the industrial engineer's work may be had by considering the relationship between cost accounting and industrial engineering. To illustrate, I would like to borrow an idea from Phil Carroll, a prominent industrial engineer in the

United States, as expressed in his recent article in the Journal of Accounting.

The relationships of the two professions may be shown by a comparison of the two types of men and their necessary aptitudes.

Both the cost accountant and the industrial engineer should be basically manufacturing men with a prime interest in the making of the product of the company.

Both would benefit greatly by a considerable background in the shop to give them an appreciation of the practical nature of their work. (A training plan, such as that offered by Ford of Canada would be of great benefit to both).

The cost accountant should be a man who is primarily interested in the correctness of the figures he prepares and in presenting them so they truly reflect the current business situation to management. He must be a man with the experience and vision to see behind the figures. He must see each actual article of manufacture and a living story of operating trends and ultimate goals.

The cost accountant has the prime duty of measuring operating performance against standards based on standard times, and operating methods and physical facilities developed by the industrial engineers. Management must be kept informed of the effectiveness of cost control.

Another chief task is the preparation of accurate historical costs so that the price of the product may cover all reasonable cost items. Still another, is the preparation of accurate figures on which to base the forward plans of the company.

His prime concern must be for accurate figures produced at the earliest moment. It is not enough, in modern times, to think in terms of cost figures 30 to 90 days, after an event.

The industrial engineer, on the other hand, is not normally interested in the accuracy of the figures alone, but rather, in the revelation of the trends of the current business situation. His whole instinct must be for change and improvement in conditions. He is not primarily interested in the amounts, because his function is to find ways to change the amounts. The engineer, therefore, is often content with slide rule approximations. He likes to break the totals down into their elements, finding their cause and effect. He is concerned with what an article should cost and takes a personal interest in the scheme he develops.

We cannot therefore afford to say that what either the cost accountant or the industrial engineer is doing is satisfactory unless, objectively, we concur in the setting up of better and faster acting tools for the service of management. Then, for both, I believe, we can predict a greater period of mutual development.

Let us now consider how industrial engineering work affects the company's chart of accounts.

In correlating the work of the industrial engineer with that of the cost accountant, I believe it would be interesting to recite some examples which can easily be associated with the corresponding accounts as found in your own system:

Take material handling, for instance. Merely handling a product, picking it up, laying it down, moving it from place to place, changes nothing, adds no value to the product, but it adds overhead cost — so our aim is to reduce material handling to the absolute minimum, without damage to the product.

For example, before we started our material handling program at Ford, cylinder blocks were loaded individually, one at a time, on a transport in Sarnia. The same procedure was followed at our receiving dock in unloading. Now, we have our vendor at Sarnia place 18 blocks on pallets at his final operation. An industrial power truck loads the transports, 18 blocks per lift, and we at Ford correspondingly handle them in the same manner. They are unloaded by pallet and transported to storage at our first machining operation — an obvious cost reduction.

Or, consider scrap removal from our punch presses and transportation to our scrap baler. This was handled by men pushing obsolete hand trucks from the press room to the baler — approximately 400 feet. Now, we use skid bins and an industrial power truck — a resultant saving of around 30%.

General stores accounts also are affected radically by the work of a new group of production engineers working on the small tools, grinding wheels and supplies used in our plant.

Our cylinder block milling cutter improvement program is a continuing program to find better methods to reduce costs of removing metal from the surfaces of the cylinder block. This cost reduction has paid for the effort expended many times over in dollars for cutting tools, labor of grinding room men, machine down-time, set-up labor and smaller tool inventories.

One outstanding example is the increase in the life of cutters for boring piston holes in cylinder blocks from 700

blocks for each time the cutter is set up to 10,000 blocks! This means, that instead of shutting down the machine and working men on this line every day for this purpose, it is now shut down less than once a month.

Grinding Wheels

We concur with the engineer conducting the grinding wheel program who maintains that the study of grinding wheels costs, per piece of work produced, will repay his salary many times over in improved cost of wheels, better working conditions for the operator, less set-up time, improved quality of the work and will have an ever-increasing effect on the profit position.

The cheapest wheel initially is by no means the best wheel to use on this basis. For example, the rough grinding of push rods was formerly done with a centerless grinding machine and a wheel costing $57, producing 20,000 parts in the life of the wheel. The new set-up uses a $91 wheel which produces 290,000 parts for the life of the wheel. This improvement in cost of over 1200% means that the operator, set-up man, wheel crib man and foreman make a new set-up every 24 days instead of every 2 days.

Machinery Accounts

The field of machinery improvements is much too extensive and the ramifications are too many to take time in discussing it at length. However, I want to mention some of the extraordinary effects of the installation of the new automatic transfer machines recently installed in Ford of Canada's cylinder block department.

The principle feature of the newest machines is the elimination of much of the handling of the parts between operations. The use of hydraulic and electronic controls to move work from operation to operation has released the operator for the much more important work of watching the quality of his work, the care of his equipment and workplace, and freed him from fatiguing operations.

The net effect in the cylinder block operations, in addition to reduced labor costs, has been to improve the safety record for all the men concerned. Originally the safety record for this department was one of the worst in Ford of Canada's machine plant, many of the accidents being serious hernias, back strain and leg injuries. Now this department's accident rate is consistently among the best 10 records of the whole plant.

Such an improvement cannot help but affect many of the expense and lost time compensation accounts as well as improving employee relations all round.

The cost accounts affected by our manufacturing division work simplification program are many and varied. Many fine examples of cost reduction, resulting from this program are now in operation, the return annually exceeding ten times its cost.

In short, a work simplification program sets out to discover practical methods of eliminating waste of all kind and brings to light better methods by emphasizing the open mind and questioning attitude and placing the analytical work simplification tools, namely the flow process charts, the man and machine charts, and operator chart, in the hands of our entire supervisory and engineering personnel and by enlisting their aid to achieve management objectives of a better product at a lower cost — now.

It sounds good, but can it be done?

Is the average foreman and engineer smart enough to do this job?

I think so!

Darwin once said, "There are more men with adequate brains than we think, but they lack the quality of enthusiasm which is hard to define."

It is not so much a question of the man's ability or intelligence as it is of securing his enthusiastic co-operation by convincing him that this is an essential part of his job.

If time permits we intend to show a short movie showing work simplification suggestions, before and after they were carried out on different operations.

I would now like to turn your attention to the future trend in industrial engineering.

In the manufacturing division, the whole character of plant organization has shifted radically towards supplying all types of expert assistance to the foreman and plant superintendent.

In my own span of experience, the number of technical men in plant operating work could be counted on two hands. Now, our engineering departments number more than 300 men. Other technical departments have had a corresponding increase in responsibilities.

So it might be well to take a look at future trends: To mention just a few:

(1) Preventative maintenance programs

(2) Development of indirect labor standards

A complete field exists in indirect labor time standards which has been little touched to date by the time study engineer. Are your indirect labor expenses distributed and controlled or, just distributed? Your answer to that question indicates whether or not you are taking advantage of at least 20% possible saving.

(3) Basic time measurement

This is a newly developed Canadian system of synthetic time standards. I believe this Society had a meeting last September on the U.S.A. counterpart — methods-time measurement.

Our company is actively investigating this new technique and have already had 6 of our men trained in this method. These men are currently using their knowledge to ascertain where this method is applicable. A more factual report on its usefulness and possibilities will be prepared in the next few months and our company will then be in a position to actively pursue this new line of action.

(4) Job instruction training

Another new program already started by the industrial engineering training staff is the job instruction training. This is a course for supervisors in "How to Instruct". It was developed during the last war as an urgent program to spread the job skill from few to many people, in a hurry. We believe it has great possibilities for good results in our plant operations.

In conclusion I should like to emphasize again that industrial engineering is a fact-finding service department. As such, it must depend to a large extent on the ability of its personnel to co-operate with other departments in getting things done.

It must win the confidence of those with whom it works and must be sure that any credit for accomplishment goes to those who deserve it. Far more important than systems, methods and procedures is the spirit of the organization.

And lastly, in my opinion, by far the most important trend in industrial engineering is the prevention of errors and losses by improved pre-planning — prior to production, thus eliminating second guessing. Anyone can improve an existing method.

In this approach lies a new horizon for the industrial engineer in Canada.

« STUDENT SECTION »

ADVANCED COST ACCOUNTING

Comments by A. V. HARRIS, C.A., R.I.A.

QUESTION 2, PAPER 1 (9 Marks)

The Pony Brand Ltd., produces three kinds of candy sticks; which are processed in successive Departments.

Candy Sticks No. 1
Candy Sticks No. 2 and
Candy Sticks No. 3

The company makes use of the Process Cost Accounting. There are three Departments: Dept. A, Dept. B, and Dept. C. As the processing within each department varies with the three different types of stick, the company has found it desirable to assign production values for each product in each department.

The following indicates the relative importance of each Candy Stick in each process:

Sticks	Dept. A	Dept. B	Dept. C
No. 1	5	4	3
No. 2	6	2	3
No. 3	11	5	4

Production:

No. 1	12,000
No. 2	14,000
No. 3	9,000

Total expenses for each Department for January are as follows:

Dept. A	$ 800.00
Dept. B	600.00
Dept. C	200.00
Total	$1,600.00

Assume there is no work in process at beginning or end of the period.

Required:

A — Prepare a statement showing the weighted average production for candy sticks for each department.

B — Present a Cost Statement for each kind of Candy Sticks.

Solution

(a)

The Pony Brand, Ltd.
Statement of Weighted Average Production

Product	Production	Weight Production Dept. A	Dept. B	Dept. C	Total
1	12,000	60,000	48,000	36,000	144,000
2	14,000	84,000	28,000	42,000	154,000
3	9,000	99,000	45,000	36,000	180,000
	35,000	243,000	121,000	114,000	478,000

(b) 12,000 candy sticks produced

Depts.	Cost	Per Unit
A	$197.53	.0164
B	238.02	.0198
C	63.16	.0052
	$498.71	.0414

14,000 sticks produced

Depts.	Cost	Per Unit
A	$276.54	.0197
B	138.84	.0099
C	73.68	.0052
	$489.06	.0348

9,000 sticks produced

Depts.	Cost	Per Unit
A	$325.93	.0362
B	223.14	.0247
C	63.16	.0070
	$612.23	.0679

Comments

Students who had understood the distribution of costs using the weighted average method found no difficulty in answering this question. Results were usually very good or very poor.